

CLAIMS

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A check valve adapted for delayed gas pressure release, which comprises:
 - a body with a proximal supply end and a distal power end;
 - a female-threaded supply end receiver open at said supply end;
 - a female-threaded power end receiver open at said power end;
 - a passage extending between and communicating said receivers;
 - said passage having a frusto-conical configuration with a minimum diameter adjacent to said supply end receiver and a maximum diameter adjacent to said power end receiver;
 - a ball movably positioned within said passage between a closed position engaging said body within said passage and an open position in spaced relation from said body within said passage; and
 - a return spring located in said passage and engaging said ball, said spring biasing said ball towards its closed position.
2. The check valve according to claim 1, which includes:
 - a bypass extending between and communicating said passage and said supply end receiver.
3. The check valve according to claim 1, which includes:

a male supply coupling adapted for connection to a compressed gas source and threadably received in said supply end receiver.

4. The check valve according to claim 3, which includes:

a male power hose coupling adapted for connection to an air hose and threadably received in said power end receiver.

5. The check valve according to claim 4, which includes:

a pair of sealing washers located between said body supply end and said male supply hose coupling and between said body power end and said male power hose coupling respectively.

6. A check valve adapted for delayed gas pressure release, which comprises:

a body with a proximal supply end and a distal power end;

a female-threaded supply end receiver open at said supply end;

a female-threaded power end receiver open at said power end;

a passage extending between and selectively communicating said receivers;

a seat located between said passage and said supply end receiver and including a discharge port;

said passage having a female-threaded set screw receiver adjacent to said power end receiver and a ball chamber located between said set screw receiver and said supply end receiver;

said ball chamber having a cross-sectional configuration with a central core and multiple, radially spaced, channels each extending longitudinally from said set screw receiver to said seat and having radiused channel sides adjacent to said core and a radiused channel outermost portion;

a ball movably position within said passage central core between a closed position engaging said seat and an open position disengaged from said seat;
a return spring located in said passage and engaging said ball, said spring biasing said ball towards its closed position; and
a bypass extending between and communicating said supply receiver and said passage, said bypass being adapted to dissipate gas through said valve with said ball in its closed position and said bypass being aligned with a respective said channel.

7. The check valve according to claim 6, which includes:

a bypass extending between and communicating said passage and said supply end receiver.

8. The check valve according to claim 6, which includes:

a male supply coupling adapted for connection to a compressed gas source and threadably received in said supply end receiver.

9. The check valve according to claim 8, which includes:

a male power hose coupling adapted for connection to an air hose and threadably received in said power end receiver.

10. The check valve according to claim 9, which includes:

a pair of sealing washers located between said body supply end and said male supply coupling and between said body power end and said male power hose coupling respectively.

11. In combination with a pneumatic system including a gas compressor, a gas supply line connected to the compressor, and a flexible gas hose connected to the supply line and a pneumatic device connected to the gas hose, the improvement of a slow-release check valve, which comprises:

a body with a proximal supply end adapted for connection to said supply line and a distal power end adapted for connection to said pneumatic device;

a female-threaded supply end receiver open at said supply end;

a male supply coupling connected to said supply line and threadably received in said supply end receiver;

a female-threaded power end receiver open at said power end;

a male power hose coupling connected to said pneumatic device and threadably received in said power end receiver;

a passage extending between and communicating said receivers;

said passage having a frusto-conical configuration with a minimum diameter adjacent to said supply end receiver and a maximum diameter adjacent to said power end receiver;

a ball movably position within said passage between a closed position engaging said body within said passage and an open position in spaced relation from said body within said passage; and

a return spring located in said passage and engaging said ball and said male power coupling, said spring biasing said ball towards its closed position.

12. The combination according to claim 11, which includes:

a bypass extending between and communicating said passage and said supply end receiver.

13. The combination according to claim 11 wherein said male supply coupling comprises a quick-disconnect type of coupling adapted for closing said gas supply line and disconnecting said hose therefrom.

14. The combination according to claim 11, which includes:

a pair of sealing washers located between said body supply end and said male supply coupling and between said body power end and said male power hose coupling respectively.

15. The combination according to claim 11, which includes said return spring having a tapered, helical configuration.